

Client's ref.: A91050
Our ref: 0535-7774-US/FINAL/rliu/kevin

What Is Claimed Is:

1 1. A power-on device for a circuit system having a power supply
2 terminal coupled to a battery and a charge input terminal coupled
3 to an adaptor, the power-on device comprising:
4 a voltage detector having an input terminal and an output
5 terminal, wherein the input terminal is coupled to the battery,
6 wherein, when voltage of the input terminal is below a threshold
7 voltage, the output terminal outputs a control signal having a
8 first level such that the adaptor supplies the circuit system
9 through the charge input terminal to start the circuit system
10 and charge the battery, and, when voltage of the input terminal
11 is above the threshold voltage, the output terminal outputs the
12 control signal having a second level such that the battery
13 supplies the circuit system.

1 2. The power-on device as claimed in claim 1 wherein the first
2 level is a low level, and the second level is a high level.

1 3. The power-on device as claimed in claim 2 further comprising:
2 a first switch having a first input terminal, a first output
3 terminal, and a first control terminal, wherein the first input
4 terminal is coupled to the adaptor, the first control terminal
5 receives a first signal from the circuit system, wherein, when
6 the first control terminal has a low level, the first switch is
7 turned off, and when the first control terminal has a high level,
8 the first switch is turned on, and the first signal is preset
9 at high level;

10 a first diode having a first positive electrode and a first
11 negative electrode, wherein the first positive electrode is

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12 coupled to the first output terminal, and the first negative
13 electrode is coupled to the charge input terminal;

14 a second switch having a second input terminal, a second output
15 terminal, and a second control terminal, wherein the second
16 input terminal is coupled to the adaptor, the second control
17 terminal is coupled to the output terminal of the voltage
18 detector, and wherein, when the second control terminal has a
19 low level, the second switch is turned off, and when the second
20 control terminal has a high level, the second switch is turned
21 off;

22 a second diode having a second positive electrode and a second
23 negative electrode, wherein the second positive electrode is
24 coupled to the second output terminal, and the second negative
25 electrode is coupled to the charge input terminal;

26 a third diode having a third positive electrode and a third
27 negative electrode, wherein the third positive electrode is
28 coupled to the second output terminal, and the third negative
29 electrode is coupled to the battery;

30 an inverter having an input terminal and an output terminal,
31 wherein the input terminal of the inverter is coupled to the
32 output terminal of the voltage detector; and

33 a third switch having a third input terminal, a third output
34 terminal, and a third control terminal, wherein the third input
35 terminal is coupled to the charge input terminal, the third
36 control terminal is coupled to the output terminal of the
37 inverter, the third output terminal is coupled to the battery,
38 wherein, when the third control terminal has a low level, the
39 third switch is turned off, and when the third control terminal
40 has a high level, the third switch is turned off.

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1 4. The power-on device as claimed in claim 2 further
2 comprising:
3 a display panel; and
4 an analog-to-digital converter having an input terminal and
5 an output terminal, wherein the input terminal of the
6 analog-to-digital converter is coupled to the battery and the
7 output terminal of the analog-to-digital converter is coupled
8 to the display panel to show charge capacity of the battery.

1 5. The power-on device as claimed in claim 1 wherein the
2 circuit system is a handset.

1 6. The power-on method as claimed in claim 1 wherein the
2 threshold voltage is 3.2V.

1 7. A power-on method for a circuit system having a power supply
2 terminal and a charge input terminal, comprising:
3 coupling the power supply terminal to a battery and the charge
4 input terminal to an adaptor;
5 detecting voltage of the battery, wherein when voltage of the
6 battery is below a threshold voltage, a control signal having
7 a first level is output;
8 turning on a second switch such that the adaptor supplies the
9 circuit system through the charge input terminal and the second
10 switch to start the circuit system and charge the battery;
11 detecting voltage of the battery, wherein, when voltage of the
12 battery is above a threshold voltage, the control signal having
13 a second level is output such that the second switch is turned
14 off, a third switch is turned on, the charge input terminal is

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15 coupled to the battery through the third switch, and the battery
16 supplies the circuit system; and
17 outputting a switch signal from the circuit system to control
18 a first switch coupled between the adaptor and the charge input
19 terminal for controlling charge capacity.

1 8. The power-on method as claimed in claim 7 wherein the first
2 level is a low level, and the second level is a high level.

1 9. The power-on method as claimed in claim 7 wherein the
2 threshold voltage is 3.2V.

1 10. The power-on method as claimed in claim 7 further
2 comprising the step of converging voltage of the battery to
3 display data and displaying the display data to show charge
4 capacity.

1 11. The power-on method as claimed in claim 7 wherein the
2 circuit system is a handset.

1 12. A power-on method for a circuit system, comprising:
2 coupling a terminal of the circuit system to a battery and the
3 other terminal of the circuit system to an adaptor;
4 detecting voltage of the battery, wherein when voltage of
5 the battery is below a threshold voltage, the adaptor supplies
6 the circuit system to start the circuit system and charge the
7 battery; and
8 detecting voltage of the battery, wherein when voltage of the
9 battery is above a threshold voltage, the battery supplies the
10 circuit system.

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1 13. The power-on method as claimed in claim 12 further
2 comprising the step of converging voltage of the battery to
3 display data and displaying the display data to show charge
4 capacity.

1 14. The power-on method as claimed in claim 12 wherein the
2 circuit system is a communication apparatus.

1 15. The power-on method as claimed in claim 12 wherein the
2 threshold voltage is 3.2V.

1 16. The power-on method as claimed in claim 12 wherein, when
2 voltage of the battery is below a threshold voltage, a control
3 signal having a first level is output to turn on a second switch
4 such that the adaptor supplies the circuit system through the
5 second switch to start the circuit system and charge the battery.

1 17. The power-on method as claimed in claim 16 wherein, when
2 voltage of the battery is above a threshold voltage, a control
3 signal having a second level is output to turn off the second
4 switch and turn on a third switch such that the circuit system
5 is coupled to the battery through the third switch and the
6 battery supplies the circuit system.